

REMARKS:

All references made below with respect to the specification of the instant application are made with regards to U.S. Patent Application Publication No. 2006/0044187 A1, the Application Publication corresponding to the instant application.

Claims 1 and 6 are amended herewith. The amendments are deemed to be merely clarifying in nature. The full range of equivalents should remain intact.

The Examiner objected to the drawings under 37 C.F.R. §1.83(a), asserting that the "switch having at least two throws" (claims 1 and 6) and the "radio telephone" (claim 12) must be shown.

Paragraph [0026] states:

Referring now to FIG. 2, a surface of the printed wire board 10 is shown in plan view. The surface 30 may be opposite to the substrate 12, but is preferably on the same side thereto. Here, a pad 31 connects to the connector 28 which in turn connects to the load patch 27. The pad 31 is connected to a pole 32 of a single pole switch 33. The connection between the pad 31 and the switch 33 is made by a first capacitor 34, having a capacitance of 47 pF. A first throw 35 of the switch 33, which is physically opposite to the pole 32 is connected to a first strip line 35 by a second capacitor 36. A second strip line 37 is connected to a second throw 38 of the switch 33 via a third capacitor 39. Similarly, a third strip line 40 is connected to a third throw 41 of the switch 33 via a fourth capacitor 42. Each of the second, third and fourth capacitors 36, 39, 42 has a capacitance of 47 pF. A ground plane is formed between but electrically insulated from the various components. The switch 33 is controlled by application of suitable voltages to three control voltage points 43-45. During operation, a voltage of around 3V is applied to one point and the remaining two points are grounded at any one time. (emphasis added)

Thus, FIG. 2 depicts an exemplary embodiment with a switch 33 having at least two throws 35, 38, 41.

Claim 12 recites: A radio telephone including an antenna arrangement as claimed in claim 1. Paragraph [0017] of the Brief Description of the Drawings states: "FIG. 7 shows the antenna arrangement of FIG. 1 mounted alongside a second antenna arrangement to form part of a radiotelephone." Paragraph [0034] of the Detailed Description states in part: "A board of a radiotelephone is shown in FIG. 7." It is submitted that FIG. 7 adequately depicts "A radio telephone including an antenna arrangement as claimed in claim 1," as recited by claim 12.

It is submitted that the above arguments comprise a complete and adequate response to the objection to the drawings. Furthermore, it is submitted that revised drawings are not needed in order to respond to and overcome the objection to the drawings. Should the Examiner require further clarification regarding aspects of the drawing figures, the Examiner is invited to contact Applicants' agent.

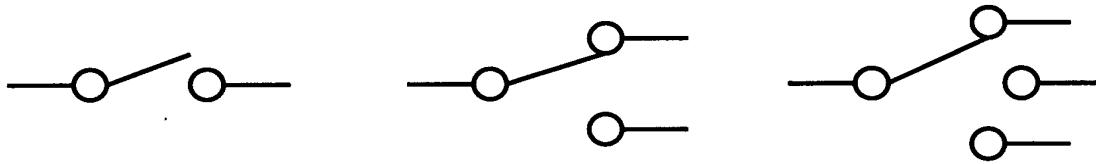
The Examiner rejected claims 1, 3, 4 and 6-12 under 35 U.S.C. §102(b) as being unpatentable over Jackson et al. (U.S. Patent No. 6,061,025). These rejections are respectfully disagreed with and are traversed below.

The Examiner cites Jackson et al. element no. 155, FIG. 5 and FIG. 14 as allegedly disclosing "a switch, the switch having at least two throws, each throw of said switch being connected to a different one of said at least two lines, the switch being arranged to connect one of said at least two lines to said load element," as recited in claim 1, for example. With regards to this particular element of claim 1, FIGS. 5, 12 and 13 of Jackson et al. are more illustrative than FIG. 14 as they show more detail of the switches employed.

Before considering Jackson et al., it may be useful to briefly review the use of two terms, specifically "poles" and "throws" as they relate to switches. It is submitted that these two terms

have specific meanings within the relevant art (switches) and are well-known to one of ordinary skill in the art, including one of ordinary skill in the art at the time the invention was made.

The "poles" are the number of separate circuits the switch makes or breaks at the same time. The "throws" are the number of positions to which each pole can be switched. Various switch arrangements are illustrated below for the Examiner's convenience.



(a) SPST

(b) SPDT

(c) SPTT

FIG. 98

FIG. 98 depicts three single pole switches. FIG. 98(a) shows a single pole single throw (SPST) switch. FIG. 98(b) shows a single pole double throw (SPDT) switch. FIG. 98(c) shows a single pole triple throw (SPTT) switch. In each of the switches shown in FIG. 98, the switch only makes or breaks one circuit at a time. Furthermore, in FIGS. 98(b) and 98(c), the switches have more than one throw since there is more than one position to which the single pole can be switched.

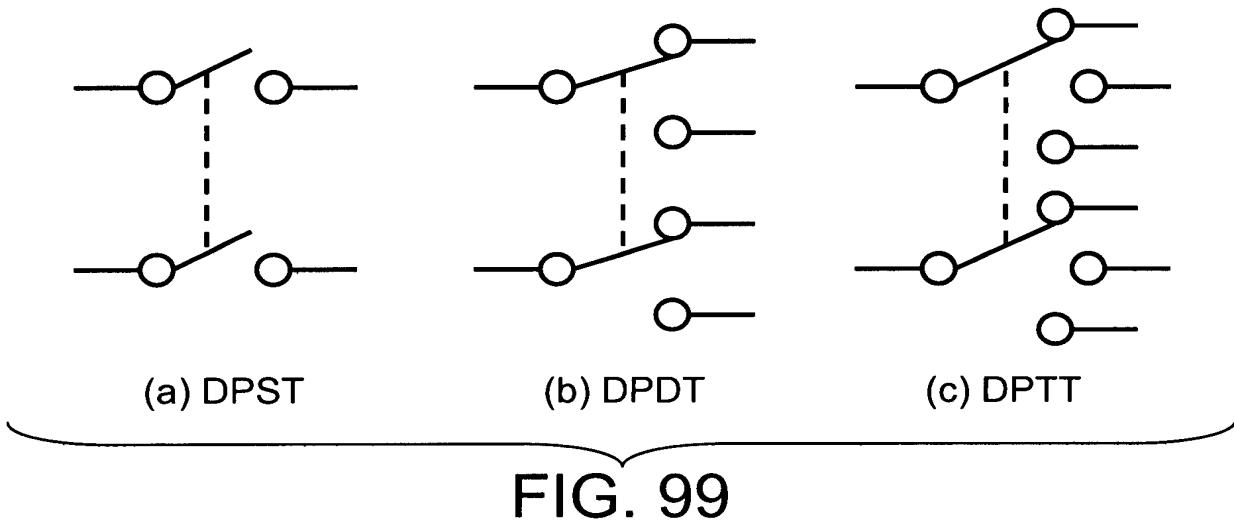


FIG. 99 depicts three double pole switches. FIG. 99(a) shows a double pole single throw (DPST) switch. FIG. 99(b) shows a double pole double throw (DPDT) switch. FIG. 99(c) shows a double pole triple throw (DPTT) switch. In each of the switches shown in FIG. 99, the switch makes or breaks two circuits at a time. Furthermore, in FIGS. 99(b) and 99(c), the poles both have more than one throw since there is more than one position to which each pole can be switched.

The above-described terminology is well known in the art. As evidence thereof, an Exhibit A is attached hereto. Exhibit A is a copy of pages 116 and 117 from a book titled Success in Electronics by Tom Duncan, published by John Murray in 1983. Switch terminology is described by Duncan with illustrations (FIGS. 9.29, 9.30 and 9.31) similar to those shown above.

Claim 1 of the instant application recites: "a switch, the switch having at least two throws, each throw of said switch being connected to a different one of said at least two lines, the switch being arranged to connect one of said at least two lines to said load element." Clearly, the switch recited by claim 1 has at least two throws. For example, the switch may comprise a SPDT (FIG. 98(b)) or a SPTT (FIG. 98(c)). However, the switch recited by claim 1 may *not* comprise a SPST (FIG. 98(a)).

FIGS. 5, 12 and 13 of Jackson et al. depict various switch configurations that may be used with the patch antenna of Jackson et al. The switch configurations of FIGS. 5, 12 and 13 each depict various arrangements of SPST switches. Jackson et al. do not disclose or suggest the use of a switch having more than one throw, such as a SPDT or a SPTT, for example. Since claim 1 of the instant application explicitly recites "the switch having at least two throws," Jackson et al. cannot be seen to anticipate at least this element of claim 1.

The features recited in claim 1 are not disclosed or suggested in the cited art. Jackson et al. certainly cannot be seen to anticipate claim 1. Therefore, claim 1 is patentable and should be allowed.

Though dependent claims 3, 4 and 6-12 contain their own allowable subject matter, these claims should at least be allowable due to their dependence from allowable claim 1. However, to expedite prosecution at this time, no further comment will be made except as noted below.

The Examiner cites FIG. 23 of Jackson et al. as allegedly disclosing the subject matter recited in claim 6 ("An antenna arrangement as claimed in claim 1, in which one of said at least two throws of said switch is connected to a strip or microstrip line of substantially zero length.") It is respectfully submitted that FIG. 23 does not show "a strip or microstrip line of substantially zero length," as recited in claim 6. Furthermore, Jackson et al. do not disclose or suggest the use of such a strip or microstrip when discussing FIG. 23 at col. 10, lines 12-49. Jackson et al. cannot be seen to anticipate claim 6. Should the Examiner maintain this rejection, it is requested that the Examiner specifically identify the components or disclosure that is considered to allegedly anticipate claim 6.

The Examiner is respectfully requested to reconsider and remove the rejections of claims 1, 3, 4 and 6-12 under 35 U.S.C. §102(b) and to allow all of the pending claims 1, 3, 4 and 6-12 as now presented for examination. For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of

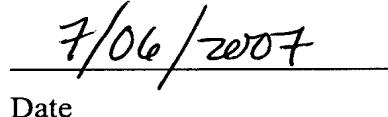
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Art Unit: 2821

record. Should any unresolved issue remain, the Examiner is invited to call Applicants' agent at the telephone number indicated below.

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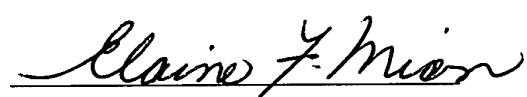
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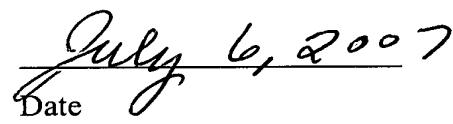
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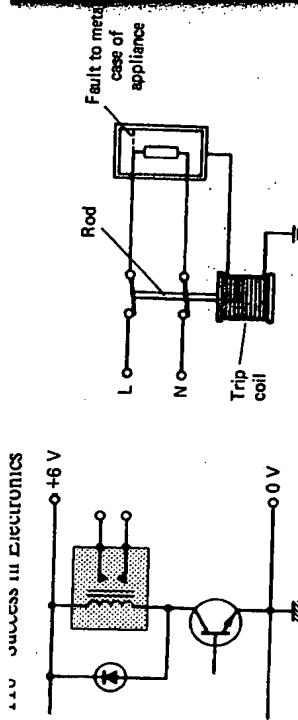


Fig. 9.26

appliance becomes 'live' due to a fault, as in Fig. 9.27. As a result the rod in the coil opens the switch, which can be set to break the circuit before the case rises above say 25 V.

9.12 Mechanical Switches

In a mechanical switch a force has to be applied to bring together or separate electrically conducting metal contacts. Various types are used in electronic circuits.

(i) **Push-button.** The switch in Fig. 9.28(a) is a 'push-on, release-off' type; its symbol is given in Fig. 9.28(b) and that for the 'push-off, release-on' variety in Fig. 9.28(c).

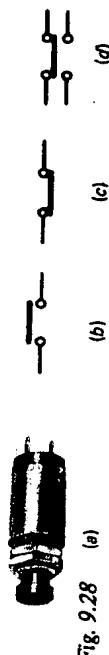


Fig. 9.28

Another common type is the 'push-on, push-off' switch. 'Push-to-change-over' switches are also made. Their symbol is shown in Fig. 9.28(d).

(ii) **Slide.** The one shown in Fig. 9.29(a) is a 'change-over' or 'single pole double throw' (SPDT) switch. The 'poles' are the number of separate circuits the switch makes or breaks at the same time. The 'throws' are the number of positions to which each pole can be switched. For example, in the symbol for a SPDT switch (Fig. 9.29(b)) there are two positions for the switch (B or C) and only one circuit (that joined to A) is switched.

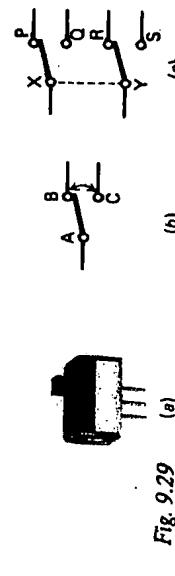


Fig. 9.29

Fig. 9.27



Fig. 9.27

(iii) **Toggle.** This is often used on equipment as a power supply 'on-off' switch, either in the 'single pole single throw' (SPST) form (shown with its symbol in Figs. 9.30(a) and (b)) or as a SPDT or DPDT type.



Fig. 9.30

The rating for a particular switch depends on whether it is to be used in a.c. or d.c. circuits. For example, a certain toggle switch is rated at 250 V a.c. 1.5 A or 20 V d.c. 3 A—if these values are exceeded the life of the switch is shortened. When a circuit is switched off, sparking occurs at the switch contacts and vaporizes the metal. In general, this lasts longer with d.c. than a.c. because the latter falls to zero twice per cycle.

(iv) **Rotary wafer.** One or more discs (wafers) of paxolin (an insulator) are mounted on a twelve-position spindle as shown in Fig. 9.31(a). The wafers have metal contact strips on one or both sides and rotate between a similar number of fixed wafers with sprung wafers with springy contact strips.

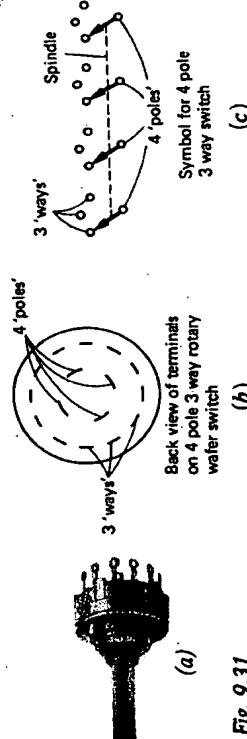


Fig. 9.31

The contacts on the wafers can be arranged to give 1 pole 12 way, 2 pole 6 way, 3 pole 4 way, 4 pole 3 way (as in Figs. 9.31(b) and (c)) or 6 pole 2 way switching.

(v) **Keyboard switch.** The one shown in Fig. 9.32 is a SPST push-to-make momentary type which can be mounted on a printed circuit board (p.c.b.).



Fig. 9.32